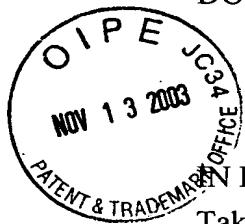


Image  
DOCKET NO.: 219110US0CONT/hc



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF:  
Takeshi MORIKAWA, et al.

SERIAL NO: 10/062,413

GROUP: 1754

FILED: February 5, 2002

EXAMINER:

FOR: PHOTOCATALYTIC MATERIAL, PHOTOCATALYST, PHOTOCATALYTIC ARTICLE, AND METHOD FOR THE PREPARATION THEREOF

**LETTER**

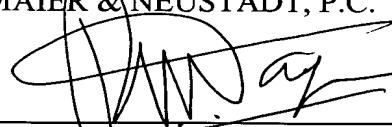
Mail Stop DD  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Submitted herewith is an International Preliminary Examination Report for the Examiner's consideration. The reference cited therein has been filed in an Information Disclosure Statement on February 5, 2002.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

  
\_\_\_\_\_  
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DOCUMENT3

**Rohitha Jayasuriya**  
Registration No. 50,385

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference TCP1-0466	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/JP00/05247	International filing date (day/month/year) 04 August 2000 (04.08.00)	Priority date (day/month/year) 05 August 1999 (05.08.99)
International Patent Classification (IPC) or national classification and IPC B01J 35/02		
<p>Applicant KABUSHIKI KAISHA TOYOTA CHUO KENKYUSHO</p>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 25 January 2001 (25.01.01)	Date of completion of this report 17 October 2001 (17.10.2001)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP00/05247

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

 the international application as originally filed the description:

pages \_\_\_\_\_ 1-37 \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

 the claims:

pages \_\_\_\_\_ 3-10, 13-28 \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, as amended (together with any statement under Article 19)

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_ 1,2,11,12 \_\_\_\_\_, filed with the letter of \_\_\_\_\_ 28 June 2001 (28.06.2001)

 the drawings:

pages \_\_\_\_\_ 1-19 \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

 the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

 the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in written form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4.  The amendments have resulted in the cancellation of: the description, pages \_\_\_\_\_ the claims, Nos. \_\_\_\_\_ the drawings, sheets/fig \_\_\_\_\_5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP00/05247

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-28	YES
	Claims		NO
Inventive step (IS)	Claims	1-28	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-28	YES
	Claims		NO

**2. Citations and explanations**

The subject matter of claim 1 appears to be novel, since it is not disclosed in document 1 [JP, 8-134630, A (President of Agency of Industrial Science and Technology), 28 May, 1996 (28.05.96)] cited in the ISR. Particularly, the feature of the present application, "having a Ti-O-N constitution with nitrogen contained in the crystal lattice of titanium oxide" is not disclosed in document 1. Document 1 describes a photocatalyst produced by depositing a titanium compound such as titanium nitride with sputtering or in vacuum to form a film, while concurrently irradiating with nitrogen atom ions ([0010]-[0012], examples), but does not describe or suggest that the photocatalyst has the Ti-O-N constitution with nitrogen contained in the crystal lattice of titanium oxide. Also considering the production method, document 1 does not describe or suggest having the Ti-O-N constitution with nitrogen contained in the crystal lattice of titanium oxide.

The subject matters of claims 2-28 quote claim 1, and since the subject matter of claim 1 appears to be novel as described above, the subject matters of claims 2-28 appear to be novel.

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No.

PCT/JP00/05247

**VI. Certain documents cited****1. Certain published documents (Rule 70.10)**

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
JP 2000-140636 A	23 May 2000 (23.05.2000)	10 1998 (10.00.1998)	

**2. Non-written disclosures (Rule 70.9)**

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)